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Bray GA, Champagne CM. Beyond energy balance: there is more to obesity than kilocalories. *Journal of the American Dietetic Association*. 2005; 105: S17-23.

Using an epidemiologic model of the interactions between environmental agents and human hosts to explain obesity, we explored food, medications, physical inactivity, toxins, and viruses as environmental agents that interact with a genetically programmed host to disturb energy balance and cause obesity. Large portion sizes, high fat intakes, easy access to calorically sweetened beverages, and lack of any need to be physically active all play a role in the toxic environment that leads to obesity. The genetic and physiologic responses of a host determine whether or not this toxic environment will produce obesity. Reversing the current trends of obesity requires a new look at the limits of the energy balance concept, and a better understanding of how environmental factors acutely and chronically change the responses of susceptible hosts.

Foster GD, Wadden TA, Makris AP, Davidson D, Sanderson RS, Allison DB, Kessler A. Primary care physicians' attitudes about obesity and its treatment. *Obesity Research*. 2003; 11:1168-77.

OBJECTIVE: This study was designed to assess physicians' attitudes toward obese patients and the causes and treatment of obesity. **RESEARCH METHODS AND PROCEDURES:** A questionnaire assessed attitudes in 2 geographically representative national random samples of 5000 primary care physicians. In one sample (N = 2500), obesity was defined as a BMI of 30 to 40 kg/m², and in the other (N = 2500), obesity was defined as a BMI > 40. **RESULTS:** Six hundred twenty physicians responded. They rated physical inactivity as significantly more important than any other cause of obesity (p < 0.0009). Two other behavioral factors—overeating and a high-fat diet—received the next highest mean ratings. More than 50% of physicians viewed obese patients as awkward, unattractive, ugly, and noncompliant. The treatment of obesity was rated as significantly less effective (p < 0.001) than therapies for 9 of 10 chronic conditions. Most respondents (75%), however, agreed with the consensus recommendations that a 10% reduction in weight is sufficient to improve obesity-related health complications and viewed a 14% weight loss (i.e., 78 +/- 5 kg from an initial weight of 91 kg) as an acceptable treatment outcome. More than one-half (54%) would spend more time working on weight management issues if their time was reimbursed appropriately. **DISCUSSION:** Primary care physicians view obesity as largely a behavioral problem and share our broader society's negative stereotypes about the personal attributes of obese persons. Practitioners are realistic about treatment outcomes but view obesity treatment as less effective than treatment of most other chronic conditions.



Puhl R, Brownell KD. Bias, discrimination, and obesity. *Obes Res.* 2001;9:788-805.

This article reviews information on discriminatory attitudes and behaviors against obese individuals, integrates this to show whether systematic discrimination occurs and why, and discusses needed work in the field. Clear and consistent stigmatization, and in some cases discrimination, can be documented in three important areas of living: employment, education and health care. Among the findings are that 28% of teachers in one study said that becoming obese is the worst thing that can happen to a person; 24% of nurses said that they are "repulsed" by obese persons; and, controlling for income and grades, parents provide less college support for their overweight than for their thin children. There are also suggestions but not yet documentation of discrimination occurring in adoption proceedings, jury selection, housing, and other areas. Given the vast numbers of people potentially affected, it is important to consider the research-related, educational, and social policy implications of these findings.

Puhl R, Brownell KD. Confronting and Coping with Weight Stigma: An Investigation of Overweight and Obese Adults. *Obesity.* 2006;14:1802-1815.

This study examined experiences of weight stigmatization, sources of stigma, coping strategies, psychological functioning, and eating behaviors in a sample of 2671 overweight and obese adults. Method and Procedures: The total sample was partitioned into two sub-samples for investigation: Sample I was comprised of 2449 adult women, and Sample II was a matched sample of adult males and females (N = 222) which was disaggregated to investigate gender differences. Both samples completed an online battery of self-report questionnaires measuring frequency of weight stigmatization and coping responses to deal with bias, the most common sources of the bias, symptoms of depression and self-esteem, attitudes about weight and obesity, and binge-eating behaviors. Results: Experiences of weight stigmatization, in many forms and across multiple occasions, were common in both samples. A variety of coping strategies were used in response to stigma, including 79% of participants who reported eating more food in response to weight stigma, and 75% who reported refusing to diet in response to stigma. More frequent exposure to stigma was related to more attempts to cope and higher body mass index. Physicians and family members were the most frequent sources of weight bias reported. No gender differences were observed in types or frequency of stigmatization. Frequency of stigmatization was not related to current psychological functioning, although coping responses were associated with emotional well-being. Discussion: These findings have important implications for obesity treatment and stigma-reduction efforts, and suggest that family members and health care providers are important targets for stigma reduction interventions.



Schwartz MB, O'Neal H, Brownell KD, Blair S, Billington C. Weight Bias among health professionals specializing in obesity. *Obes Res.* 2003;11:1033-1039.

Purpose: To determine the level of anti-fat bias in health professionals specializing in obesity and identify personal characteristics that correlate with both implicit and explicit bias. **Research Methods and Procedures:** The Implicit Associations Test (IAT) and a self-report questionnaire assessing explicit attitudes, personal experiences with obesity, and demographic characteristics was administered to clinicians and researchers attending the opening session of an inter-national obesity conference (N = 389). The IAT was used to assess overall implicit weight bias (associating "obese people" and "thin people" with "good" vs. "bad") and three ranges of stereotypes: lazy-motivated, smart-stupid, and valuable-worthless. The questionnaire assessed explicit bias on the same dimensions, along with personal and professional experiences with obesity. **Results:** Health professionals exhibited a significant pro-thin, anti-fat implicit bias on the IAT. In addition, the subjects significantly endorsed the implicit stereotypes of lazy, stupid, and worthless using the IAT. Level of bias was associated with several personal characteristics. Characteristics significantly predictive of lower levels of implicit anti-fat bias include being male, older, having a positive emotional outlook on life, weighing more, having friends experience of obesity. **Discussion:** Even professionals whose careers emphasize research or the clinical management of obesity show very strong weight bias, indicating pervasive and powerful stigma. Understanding the extent of anti-fat bias and the personal characteristics associated with it will aid in developing intervention strategies to ameliorate these damaging attitudes.

Wadden TA, Didie E. What's in a name? Patients' preferred terms for describing obesity. *Obesity Research.* 2003; 11: 1140-6.

OBJECTIVE: To determine the terms that obese individuals find undesirable or desirable for their doctors to use to describe excess weight of 27.3 kg (i.e., 50 lb) or more. **RESEARCH METHODS AND PROCEDURES:** The study surveyed 167 women and 52 men with a mean BMI of 35.3 and 35.1 kg/m², respectively, who participated in one of two randomized trials on the treatment of obesity. An additional sample consisted of 105 extremely obese women (i.e., mean BMI of 52.5 kg/m²) who sought bariatric surgery. Patients rated the desirability of 11 terms used to describe excess weight. Ratings were made on five-point scales, ranging from very desirable (+2) to neutral (0) to very undesirable (-2). **RESULTS:** Obese women (N = 167) rated as undesirable to very undesirable the terms fatness (mean rating = -1.8), excess fat (-1.4), obesity (-1.4), and large size (-1.3). These four terms were rated as significantly more (all p < or = 0.001) undesirable than the seven remaining descriptors, which included weight, heaviness, BMI, excess weight, unhealthy body weight, weight problem, and unhealthy BMI. The term weight received a mean rating of 1.1, a value significantly more (all p < or = 0.001) desirable than that for all other descriptors. Highly similar ratings of the terms were provided by obese men (N = 52) and extremely obese women (N = 105). **DISCUSSION:** Practitioners may wish to avoid the use of potentially derogatory terms such as fatness and obesity when broaching the topic of weight management with patients.



Wadden TA. Brownell KD. Foster GD. Obesity: responding to the global epidemic. *Journal of Consulting & Clinical Psychology*. 2002;70: 510-25.

Obesity has reached epidemic proportions in the United States and other developed nations. In the United States, 27% of adults are obese and an additional 34% are overweight. Research in the past decade has shown that genetic influences clearly predispose some individuals to obesity. The marked increase in prevalence, however, appears to be attributable to a toxic environment that implicitly discourages physical activity while explicitly encouraging the consumption of supersized portions of high-fat, high-sugar foods. Management of the obesity epidemic will require a two-pronged approach. First, better treatments, including behavioral, pharmacologic, and surgical interventions, are needed for individuals who are already obese. The second and potentially more promising approach is to prevent the development of obesity by tackling the toxic environment. This will require bold public policy initiatives such as regulating food advertising directed at children. The authors call not for the adoption of a specific policy initiative, but instead propose that policy research, based on viewing obesity as a public health problem, become a central focus of research.

